

### **REMARKS**

Upon entry of the Amendment above, claims 1-18, 21-33, 35-36, 43-44, 48-53, 58-50, 61-63 and 68 will be pending in this application. By this amendment, claims 1, 21, 27, and 35 have been amended; and claims 45 and 46 have been cancelled. No new matter has been added as a result of the Amendment above.

Reconsideration of the merits of the application is respectfully requested in light of the Amendment above and the Remarks that follow.

### **Specification**

The abstract was objected to because it contained phrases such as “is discussed” which can be implied. The abstract has been amended to remove such phrases. Withdrawal of the objection is respectfully requested.

### **Claim Objections**

Claims 1 and 27 were objected to because they inadvertently listed some disease states twice. Claims 1 and 27 have been amended to delete the inadvertent double listing of rheumatoid arthritis, Type I diabetes, ankylosing spondylitis and spinal cord injury.

### **King (U.S. 6,058,331)**

Claims 1–13, 21, 23–24, 27–31, 35 and 45 have been rejected under 35 USC § 102(b) as allegedly being anticipated by US Patent No. 6,058,331 (“King”). Applicant respectfully traverses the rejection to the extent it is maintained.

According to the Office Action, King discloses a method for treating organ ischemia using spinal cord or peripheral nerve stimulation, which may include stimulation of a sympathetic neuron. Independent claims 1 and 27 and their dependent claims 12 and 35 have been amended to remove “organ ischemia, reperfusion injury, and organ necrosis” from the list

of diseases or disorders associated with an inflammatory immune response. Claim 45, which recited organ ischemia, has been deleted.

Applicant asserts that King fails to disclose stimulation of a sympathetic neuron in a subject suffering from or at risk of one of the diseases or disorders specifically recited in independent claims 1 or 27 as amended. As such, King does not anticipate independent claims 1 or 27, or any of their dependent claims.

Withdrawal of this rejection is respectfully requested.

**Yun (U.S. 2004/0249416)**

Claims 1–13, 21–24, 26–31, 33, 35, 36, 43–46, 48–53, 58–59, 61–63 and 68 have been rejected under 35 USC § 102(e) as allegedly being anticipated by US Pre-grant Publication No. 2004/0249416 (“Yun”). Applicant respectfully traverses the rejection to the extent it is maintained.

Applicants submit herewith an affidavit under 37 C.F.R. § 1.131 from the inventor, Lisa Shafer, declaring that the invention as currently present in the pending claims was (i) conceived of prior to the filing of the earliest priority date of Yun, which is June 9, 2003 and (ii) diligently reduced to practice from before June 9, 2003 until the filing of the provisional application, to which the present application claims priority, on October 1, 2003. As Yun was not filed prior to the invention as claimed in claims 1–13, 21–24, 26–31, 33, 35, 36, 43–46, 48–53, 58–59, 61–63 and 68, withdrawal of the rejection is respectfully requested.

**King in view of Tracey (U.S. 6,610,713)**

Claims 14–18, 26 and 33 have been rejected under 35 USC § 103(a) as allegedly being as unpatentable over King in view of U.S. Patent No. 6,610,713 (“Tracey”). Applicant respectfully traverses the rejection to the extent it is maintained.

One of skill in the art, upon reading King, would not be lead to stimulate a sympathetic neuron to reduce inflammation in a subject suffering from or at risk of a disease or disorder specifically recited in independent claims 1 or 27 as amended. King does not appear to teach

that stimulation of a neuron of the sympathetic system can result in inhibition of release of a pro-inflammatory mediator. While King does disclose that stimulation of a sympathetic ganglia (see, e.g., column 3, lines 45-48) may be useful for treating symptoms in patients with peripheral vascular disease to increase blood flow or decrease ischemic pain, King does not appear to teach or recognize that such stimulation may reduce inflammation or an inflammatory response. One of skill in the art, upon reading King, would not be lead to treat inflammatory aspects of a disease through sympathetic stimulation.

Tracey fails to overcome the deficiencies of King discussed above with respect to independent claims 1 and 27, and thus the combination of Tracey and King does not render dependent claims 14-18, 26, and 33 obvious. In fact, the combination of Tracey and King would teach away from independent claims 1 and 27, and thus dependent claims 14-18, 26, and 33. As stated above, King does not appear to recognize that stimulation of the sympathetic system (or a neuron thereof) would produce an anti-inflammatory effect, while Tracey teaches that stimulation of the parasympathetic system (or a neuron thereof) results in an anti-inflammatory response. The sympathetic (fight or flight) and parasympathetic (rest and digest) nervous systems generally act in opposing fashion. Stimulation of the sympathetic system (or a neuron thereof) would be expected to produce a result that is vastly different from stimulation of the parasympathetic system (or a neuron thereof). One of skill in the art would not look to stimulating a neuron of the sympathetic system to effectuate a physiological change similar to one shown to occur when stimulating the parasympathetic system. Because of the antagonist nature of these two systems, one would not have expected that stimulating a neuron of the sympathetic system would result in inhibition or the release of a pro-inflammatory mediator or inhibition of an inflammatory cytokine cascade in a manner similar to the parasympathetic system. In fact, one would have expected an *increased* inflammatory response if reviewing the disclosure of King in light of Tracey. Accordingly, the combined disclosures of King and Tracey *teach away* from any and all claims of the present application. Accordingly the combination of King and Tracey does not render obvious claims 14-18, 26 and 33.

Withdrawal of this rejection is respectfully requested.

**King re claims 25 and 32**

Claims 25 and 32 have been rejected under 35 USC § 103(a) as allegedly being as unpatentable over King. Applicant traverses the rejection to the extent it is maintained.

As stated above, King does not teach stimulation of a sympathetic nerve or neuron in a patient suffering from or at risk of one of the diseases or disorders recited in independent claims 1 and 27 as amended and one would not be lead to stimulate a sympathetic nerve or neuron in such patients. Accordingly, one would not be lead to stimulate an end organ innervated by such nerves or neurons upon reading King. As such, King does not render claims 25 and 32 obvious. Withdrawal of the rejection is respectfully requested.

**Yun in view of Tracey**

The Office action at item 19 states that claims 14-18 have been rejected under 35 USC § 103(a) as being unpatentable over King in view of Tracey. However, it appears that the Office Action was intended to state the rejection in term of Yun in view of Tracey. As King in view of Tracey is discussed above with regard to claims 14-18, Applicant will discuss Yun in view of Tracey to the extent that the rejection may apply to claims 14-18.

As stated above, in light of the affidavit submitted herewith where the inventor, Lisa Shafer, states that the claims in the present application were (i) conceived of prior to the earliest priority date of Yun and (ii) diligently reduced to practice prior to the earliest priority date of Yun until the filing of the provisional application to which the present application claims priority, Yun is not prior art to the present claims. Accordingly, the combination of Yun and Tracey cannot render obvious claims 14-18. Withdrawal of the rejection is respectfully requested.

**Yun re claims 25 and 32**

Claims 25 and 32 have been rejected under 35 USC § 103(a) as allegedly being as unpatentable over Yun.

As stated above, in light of the affidavit submitted herewith where the inventor, Lisa Shafer, states that the claims in the present application were (i) conceived of prior to the earliest priority date of Yun and (ii) diligently reduced to practice prior to the earliest priority date of Yun until the filing of the provisional application to which the present application claims priority, Yun is not prior art to the present claims. Accordingly, Yun cannot render obvious claims 25 and 32. Withdrawal of the rejection is respectfully requested.

**Provisional Rejections**

Claims 1-18, 21-33, 35-36, 43-36, 48-53, 58-59, 61-63 and 68 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-129 of copending Application Serial No. 10/820,677 now Publication No. 2005/0075701 ("Shafer").

As this rejection is provisional, Applicant will address this double patenting rejection, if appropriate, upon allowance of the claims presented herein.

In view of the foregoing amendments, Applicants respectfully request reconsideration and allowance of the claims as all rejections have been overcome. Notice to this effect is kindly requested.

The Examiner is respectfully requested to contact the undersigned by telephone at 763.259.6704 or by E-mail at [kcampbell@cnwiplaw.com](mailto:kcampbell@cnwiplaw.com) with any questions or comments.

Please grant any extension of time, if necessary for entry of this paper, and charge any fee due for such extension or any other fee required in connection with this paper to Deposit Account No. 50-3964.

Respectfully submitted,

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/Anna M. Nelson/

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